



“46 MW MANGOLI WIND POWER PROJECT IN KARNATAKA”



Document Prepared By Earthood Services Private Limited

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Summary:

Earthood Services Private Limited (ESPL) has performed the verification of the project “46 MW Mangoli Wind Power Project in Karnataka” VCS ID 1771, against VCS Standard Version 4. The scope of verification includes confirming the implementation of the monitoring plan of the approved VCS PD (version 02) dated 28/12/2018 and the application of the monitoring methodology “ACM0002 version 19: “Grid-connected electricity generation from renewable sources”.

The verification is consisted of three phases: i) desk review of the project; ii) follow-up onsite visit and interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted following ESPL internal quality procedures.

During the verification process 02 CARs, 00 CL and 00 FARs were raised. All the findings have been closed satisfactorily and the same has been discussed in Appendix 4.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the project activity “46 MW Mangoli Wind Power Project in Karnataka” in India during the period 01/06/2018 - 30/11/2019 (including both days) amount to 241,230 tonnes of CO₂e.

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1. INTRODUCTION

1.1 Objective

Kosher Climate India (P) Limited has contracted Earthood Services Private Limited (ESPL) to perform VCS Verification of the '46 MW Mangoli Wind Power Project in Karnataka' in India (hereafter called project). This project has already been registered as a VCS project (VCS ID 1771). The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the DOE. The verification process shall determine whether the proposed project activity complies with the requirements of latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of verification is to assess the claims and assumptions made in the VCS monitoring report (MR) against the VCS criteria, including but not limited to, VCS standard, applied methodology and other relevant rules and requirements established for VCS project activities.

The Verification is not meant to provide any consulting towards the project participants. However, stated requests for clarification and/or correction actions request may have provided inputs for improvement of the project design.

1.3 Level of Assurance

The verification team verified the complete monitoring data for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. Therefore, ESPL confirms that the verification is conducted with reasonable level of assurance.

1.4 Summary Description of the Project

The project activity is installation of 46 MW wind power project, promoted by Energon KN Wind Power Private Limited. The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 23 numbers of Vestas V110 Wind Turbine Generators (WTGs) of 2.0 MW capacities each. The project WTGs are installed in the villages Mangoli & Hegadihala in Bijapur district of Karnataka in India.

All the WTGs of the project activity were commissioned on 23/07/2016. The same was verified against the approved VCS PD/01/ and commissioning certificates/12/.

The electricity generated by the project is exported to the Indian electricity grid. The project activity will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. Since wind power is Greenhouse Gas (GHG) emissions free, the power generated will prevent the anthropogenic gas emissions generated by fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas.

Location of the project was verified through Google Map (<https://www.gps-coordinates.net/>) and found consistent with the data provided in the registered PD /01/.

The emission reductions from the project activity during the period 01/06/2018 - 30/11/2019 (including both days) amount to 241,230 tonnes of CO₂e.

2. VERIFICATIONPROCESS

The registered VCS project is undergoing second verification under VCS(1stCrediting period), the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

ESPL assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The validation/verification process consist of the following three phases;

- A desk review of the VCS PD and VCS MR
- Site visit and follow up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

2.2 Document Review

The verification is performed primarily as a document review of the approved VCS PD, previous MR and Verification report and associated documents as stated in detail in appendix 1 of this document. The assessment is performed by a verification team using a protocol. The cross checks between information provided in the Monitoring report, VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations.

2.3 Interviews

The site visit for the project location, by the assessment team, was conducted on 16/01/2020 and the following stakeholders were interviewed.

S N	Name	Organization
1.	Raghavendra Naik	Vena Energy
2.	Hareesh Kumar Patil	Vena Energy
3.	Jabastin Deivendran	Vestas
4	Narendra R	Kosher Climate

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording and archiving procedures. The assessment was drawn based on the feedback received during interview coupled with the documentation and on-site observations.

2.4 Site Inspections

A site visit was undertaken by ESPL team on 16/01/2020 to carry out the following;

- a) An assessment of the implementation and operation of the registered project activity as per the approved VCS PD and VCS MR;
- b) A review of information flows for generating, aggregating and reporting the monitoring parameters;
- c) Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD;
- d) A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
- e) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- f) A review of calculations and assumptions made in determining the GHG data and emission reductions;
- g) An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol

(internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the ESPL during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

All the findings that are raised and communicated to project participant during the verification are included under Appendix 4. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

The project activity is undergoing second verification of 1st crediting period under VCS; there were no FARs raised during the validation or previous verification/03/.

2.6 Eligibility for Validation Activities

Not applicable.

3. VALIDATION FINDINGS

Not applicable.

3.1 Participation under Other GHG Programs

The project activity is registered under the VCS only (VCS Project ID 1771) and is not registered under any other emissions trading program or any other mechanism that includes GHG allowance trading. PP also confirms that net GHG emission reductions or removals generated during this monitoring period shall not be used for compliance under any such programs or mechanisms. This was confirmed through a declaration/15/ submitted by the PP and hence accepted by the assessment team.

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period.

3.3 Project Description Deviations

There is no project description deviation identified during the current monitoring period.

3.4 Grouped Project

Not applicable. The project activity is not a grouped project

4. VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity is installation of 46 MW wind power project, promoted by Energon KN Wind Power Private Limited. The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 23 numbers of Vestas V110 Wind Turbine Generators (WTGs) of 2.0 MW capacities each. The project WTGs are installed in the villages Mangoli & Hegadihala in Bijapur district of Karnataka in India.

All the WTGs of the project activity were commissioned on 23/07/2016. The installation and specification of WTGs has been checked with commissioning certificates/12/ and on-site assessment/19/. The commissioning has also been duly validated in the VCS validation report of the project activity/02/. There was no major breakdown or shutdowns during the monitoring period which might affect the applicability of methodology or might cause material errors in emission reductions.

Assessment team concludes the following:

- a) There is no material discrepancies between project implementation and the project description provided in the registered PD/01/.
- b) The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
- c) There is no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/09/.
- d) The GHG emission reductions or removals generated by the project have not included in an emissions trading program or any other mechanism that includes GHG allowance trading/17/.
- e) The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation or previous verification/03/.
- f) The project is registered under VCS only.
- g) The project activity is comply with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR.

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the project description.

4.2 Safeguards

4.2.1 No Net Harm

Not applicable for this verification.

4.2.2 Local Stakeholder Consultation

Not applicable for this verification.

4.3 AFOLU-Specific Safeguards

Not applicable for this verification.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD/01/ and the VCS MR/04/. The monitoring plan laid in the registered PD is being followed at the site/18/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/04/.The emission reductions are purely based on the net electricity generated and exported from the machines. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation supplied to the grid by each phase used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/06/ provided by PP. the verification of each monitoring parameter has been discussed later in section 4.5.

The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e. ACM0002 version 19 /10/. Since project activity is a wind power project, leakage emission and project emission has been considered as zero.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The below tables describe how the parameter, that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met.

Parameter	Calculated (based on the measured values of electricity exported and imported), $EG_{\text{facility},y}(\text{MWh})$	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The electricity exported to the grid is measured through energy meters at the WTG metering location on continuous basis and reported monthly.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the approved PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Energy meters (main & Check) installed at substation.
	Is accuracy of the monitoring equipment	All the energy meters are two-way tri-vector meters of accuracy class 0.2s.

	as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Accuracy of the monitoring equipment's is in accordance with the monitoring plan as outlined in the PD.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy valid for the entire measuring range.
	Calibration frequency /interval:	Annual
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	There was no delay in meter calibration.
	Is the calibration of measuring equipment carried out by an accredited person or	Calibration of the measuring equipment's is carried out by an accredited entity i.e. by HESCOM state utility /07/

	institution?	
	Is(are) calibration(s) valid for the whole reporting period?	There was no delay in meter calibration and hence the calibration is valid for whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, calibration carried out for a measuring range comparable with the range for which measurements have been carried.
	How were the values in the monitoring report verified?	Reported values of this parameter have been verified with monthly joint metering report/08/during site visit .Value of this parameter for the current monitoring period is verified as 254,598 MWh. Furthermore monthly values of this parameter is reported in the ER calculation sheet/06/ are also verified with the MR/04/ and found to be consistent.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of this parameter were further cross checked with the monthly invoices raised by the PP /09/ and found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority, the PP and the O&M Contractor. The data transfer process for the said parameter is as follows: Joint monthly meter reading is taken at the substation meters by representative of DISCOM and O&M team/service provider (on behalf of the project proponent). It must be noted here that the meter readings as mentioned above shall be calculated as the product of meter multiplication factor and the difference of the current and previous meter readings
	In case project participants have	No such issues.

	temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?		
Findings	No conformity found therefore no finding raised		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology/10/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter fixed ex-ante:

$EF_{OM,y}$; tCO_{2e}/MWh : it is the operating margin emission factor of Indian grid fixed at the time of project registration and mentioned value of 0.9726 tCO_{2e}/MWh is consistent with the PD/01/.

$EF_{BM,y}$; tCO_{2e}/MWh : it is the build margin emission factor of Indian grid fixed at the time of project registration and mentioned value of 0.8723 tCO_{2e}/MWh is consistent with the PD/01/.

$EF_{grid,CM,y}$; tCO_{2e}/MWh : it is the combined margin emission factor Indian grid fixed at the time of project registration and mentioned value of 0.9475 tCO_{2e}/MWh is consistent with the PD/01/.

Calibration of meters:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked during the on-site inspection and were found to be satisfactory. Details of meters are provided in below table:

Energy meters

From: COD to 13/06/2018

Details	Main meter	Check meter	
Meter Number	16195263	16195257	
Make	L&T	L&T	
Accuracy	0.2S	0.2S	
Location	GSS	GSS	
Calibration Date	12/02/2018	12/02/2018	
	13/06/2018	13/06/2018	
Calibration Due date	11/02/2023	11/02/2023	No Delay
	12/06/2023	12/06/2023	No Delay

From 13/06/2018 to Till date

Details	Main meter	Check meter	
Meter Number	18053689	18053925	
Make	L&T	L&T	
Accuracy	0.2S	0.2S	
Location	GSS	GSS	
Calibration Date	13/06/2018	13/06/2018	
	15/12/2018	15/12/2018	
	17/06/2019	17/06/2019	
Calibration Due date	12/06/2023	12/06/2023	No Delay
	14/12/2023	14/12/2023	No Delay
	16/06/2024	16/06/2024	No Delay

The details of monitoring the equipment are involved in the project activity and their calibration details/07/ are mentioned in the table under Section 3.2 of the VCS MR/04/. The energy meters installation dates and calibration dates were verified with respective energy meter replacement and calibration certificate issued by HESCOM (state utility) and also each meter has been physically inspected during the site visit and the meter details are found to be consistent with that observed during the site visit.

The assessment team has verified the monthly joint meter reading report issued by respective state utility and confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid by the WTGs belongs to particular developer and consequently for ER calculations. As verified through the calibration certificates, that meters were working satisfactorily during the current monitoring period. The approved VCS PD/01/ & MR /04/ and site visit observations confirm that the metering equipment are sealed and maintained by the state utility.

In view of the above discussion the assessment team able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations

The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

$$BE_y = EG_{PJ,y} * EF_y$$

Where:

BE_y : Baseline emissions in year y (tCO₂e/yr)

$EG_{PJ,y} = EG_{facility,y}$ = Electricity supplied by the project activity to the grid in year y (MWh/yr)

EF_y : Combined Margin (CM) Emission Factor of Indian grid (tCO₂e/MWh)

$$\text{Thus, } BE_y = EG_{facility,y} * EF_y$$

$$\text{Thus, } BE_y = 254,598 \text{ MWh} * 0.9475 \text{ tCO}_2\text{e/MWh}$$

$$= 241,230 \text{ tCO}_2 \text{ e}$$

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

However, verification team has observed that the actual ER achieved during the current monitoring period is higher than the estimated ER as per registered PD for the comparable period. This comparison is submitted in the ER sheet along with a justification confirming that this event of higher power generation was an unforeseen situation and also not under the direct control of PP. The verification team has reviewed and verified the facts and supporting provided by PP and able to conclude that justification is valid and such condition is an unforeseen event which is not a regular affair in the project activity, moreover PP does not any direct control on it.

The verification team has assessed the cause of any variation in the actual GHG emission reductions achieved during the current monitoring period. There is increase of around 33.6 % in the actual emission reductions achieved during the current monitoring period from that stated in the registered VCS PD. This is largely due to higher plant load factor (PLF) achieved during the current monitoring period.

The higher generation achieved is due to the following reasons:

- The 18 month monitoring period covers two high wind seasons (ie, southwest monsoon from June – September) results in higher generation. With consideration of last 12 months (from December 2018 to November 2019), the actual emission reduction is only 18.4% higher than the estimated emission reduction.
- The extended southwest monsoon in Karnataka during the 2019 results in higher generation. As per the Karnataka State Natural Disaster Monitoring Centre, the southwest monsoon during the year 2019 is about 20% higher than normal. Hence, the 18.4%

increase of generation during the last 1 year (from December 2018 to November 2019) is also justified.

It can be noted that the increase in monsoon period is for one year does not have considerable influence the overall generation of the project during the lifetime. It can also be noted during the previous monitoring period (July 2016 to May 2018), the actual emission reduction achieved is about 1.02% less than the estimated emission reduction. Hence, the increase in generation/emission reduction is not foreseen and also does not affect the IRR of the project.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity.

5. VERIFICATION CONCLUSION

Earthood Services Private Limited (ESPL), contracted by Kosher Climate India (P) Limited, has performed the independent verification of the emission reductions for the VCS project activity (VCS ID- 1771) “46 MW Mangoli Wind Power Project in Karnataka” in India for the monitoring period 01/06/2018 - 30/11/2019 as reported in the Monitoring Report Version 02 dated 16/01/2020. The Kosher Climate India (P) Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity. It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity

ESPL commenced the verification on the basis of the baseline and monitoring methodology ACM0002 version 19, the monitoring plan contained in the registered PD Version 02 dated 28/12/2018 and VCS guidelines version 4, Monitoring Report Version 02 dated 16/01/2020 as per the process described under Section 2 of this report.

ESPL verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 01/06/2018 - 30/11/2019 are fairly stated in the Monitoring Report Version 02 dated 16/01/2020. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 version 19, and the VCS standard.

Verification period: From 01/06/2018 - 30/11/2019 (including both days)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline	Project emissions	Leakage	Net GHG emission
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	emissions or removals (tCO ₂ e)	or removals (tCO ₂ e)	emissions (tCO ₂ e)	reductions or removals (tCO ₂ e)
Year 2018 (1 st Jun to 31 st Dec 2018)	105,743	0	0	105,743
Year 2019 (1 st Jan to 30 th Nov 2019)	135,487	0	0	135,487
<i>Total</i>	241,230	0	0	241,230

Approved by



Dr. Kaviraj Singh
Managing Director

Date: 22/01/2020

Earthood Services Privated Limited

Place: Gurgaon,

APPENDIX 1: REFERENCES

S. No	Title of Document	Version	Date
1.	Registered VCS PD	2.0	28/12/2018
2.	VCS Joint Validation and Verification Report(Monitoring period: 23/07/2016 - 31/05/2018)	2.0	10/01/2019
3.	VCS Monitoring Report (First Submission) (Monitoring period: 01/06/2018- 30/11/2019)	01	26/12/2019
4.	VCS Monitoring Report (Final Submission) (Monitoring period: 01/06/2018- 30/11/2019)	02	16/01/2020
5.	ER spread sheet (First Submission)	01	26/12/2019
6.	ER spread sheet (corresponding to the final monitoring report)	02	16/01/2020
7	Certificates of Calibration for all the meters belongs to project activity	-	-
8.	Monthly joint meter reading report issued by state HESCOM	-	01/06/2018 to 30/11/2019
9.	Invoice issued by PP to respective stateHESCOM	-	01/06/2018 to 30/11/2019
10.	"Grid-connected electricity generation from renewable sources", ACM0002,	19.0	-
11.	CEA Database	13.0	June 2018
12.	Commissioning certificate for all the WTGs of the project activity issued by state electricity authority	-	-
13.	Power Purchase Agreements signed between Project Proponent and state electricity authority	-	-
14.	VCS webpage for the project, VCS ID 1771; https://www.vcsprojectdatabase.org/-/project_details/1771	-	Last accessed on 18/01/2020
15.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-

S. No	Title of Document	Version	Date
16.	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17/03/2006 <u>No. 502/70/CEA/DP&D</u> Amendments Notified on 26/06/2010 <u>No. 502/6/2009/DP&D/D-I</u>	-	-
17.	VCS Standard	Version 4	19/09/2019
18.	VCS Program Guide	Version 4	19/09/2019
19.	On site assessment –interviews of staff personnel, photographs, physical inspection of monitoring system	-	16/01/2020
20.	Clean Development Mechanism Validation and Verification Standard for Project Activity (CDM-VVS for PA), as per EB 101, Annex 2	2.0	29/11/2018

APPENDIX 2: COMPETENCY STATEMENT

Competence Statement	
Name	Vivek Kumar Ahirwar
Country	India
Education	B.E. (Mechanical Engineering) M.Tech (Energy Management)
Experience	10 Years +
Field	Climate Change & Environment
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	ACM0002, AMS.I.D

Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (1.1, 1.2, 13.1)		
Reviewed by	Shreya Garg	Date	11/09/2018
Approved by	Anshika Gupta	Date	11/09/2018

Competence Statement			
Name	Anshika Gupta		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	4 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.A., AMS-II.G., ACM0002, AMS-III.A.V.		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	Yes (TA 1.2, TA 3.1)		
Reviewed by	Shreya Garg	Date	12/03/2019
Approved by	Kaviraj Singh	Date	12/03/2019

APPENDIX 3: ABBREVIATIONS

ABT	Availability Based Tariff
BEF	Baseline Emission Factor
BM	Build Margin
CAR	Corrective Action Request
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CL	Clarification Request
CMS	Central Monitoring System
CMP	Conference of Parties Serving as Meeting of Parties
CO2	Carbon dioxide
DISCOM	Distribution Company
EB	Executive Board
EPC	Engineering, Procurement and Construction
FAR	Forward Action Request
GHG	Green House Gas
ISO	International Standards Organization
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
MFR	Multi-Function Relay
MR	Monitoring Report
HESCOM	Hubli Electricity Supply Company Limited
MW	Megawatt

MWh	Megawatt-hour
O&M	Operation and Maintenance
PD	Project Description
PLF	Plant Load Factor
PP	Project Proponent
QA/QC	Quality Assurance and Quality Control
TOD	Time of the Day
UNFCCC	United Nations Framework Convention on Climate Change
WEC	Wind Energy Convertor
WEG	Wind Energy Generator
WTG	Wind Turbine Generator
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCS PD	VCS Project Description
VCUs	Voluntary Carbon Units

APPENDIX 4: FINDINGS OVERVIEW

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	Section no.	NA	Date :DD/MM/YYYY
Description of FAR			
N/A			
Project participant response			Date :DD/MM/YYYY
NA			
Documentation provided by project participant			
NA			
DOE assessment			Date: DD/MM/YYYY
NA			

Table 2. CL from this validation

CL ID	Section no.	NA	Date :DD/MM/YYYY
Description of CL			
N/A			
Project participant response			Date :DD/MM/YYYY
NA			
Documentation provided by project participant			
NA			
DOE assessment			Date :DD/MM/YYYY
NA			

Table 3. CAR from this validation

CAR ID	Section no.	MR	Date :14/01/2020
Description of CAR			
PP is requested to include CEA database version 11 link in Section 3.1 of MR.			
Project participant response			Date: 16/01/2020
The link of CEA database version 13 link is given in footnote of Section 3.1 of MR.			
Documentation provided by project participant			
Revised MR			
DOE assessment			Date: 18/01/2020
Assessment team confirm that PP has included CEA database version 13 link in section 3.1 of revised MR hence accepted.			
CAR#1 Closed			

CAR ID	02	Section no.	MR	Date :14/01/2020
Description of CAR				
PP is requested to include Baseline emission value after sample calculation in section 4.1 of the MR.				
Project participant response				Date: 16/01/2020
The baseline emission value is now included after sample calculation in section 4.1 of the MR.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date:18/01/2020
Assessment team confirm that PP has included baseline emission value in section 4.1 of the revised MR. Hence accepted				
CAR#2 Closed				

Table 4. FAR from this validation

FAR ID		Section No.	MR	Date : DD/MM/YYYY
Description of FAR				
NA				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				